THE FLYCATCHER OF THE REEDS.

By TARLTON RAYMENT.

Since all things in Nature seem to be more or less interdependent, the student of botany not infrequently finds it essential to trespass on the domain of the geologist, in order to explain some obscure phenomenon of the plant world. In a like manner, the specialist in bees has sometimes to depart from his beloved honey-gatherers to investigate a fly or a wasp, because of a certain incidence on the subject under review.

Just so; when I was delving into the life-history of the reed-dwelling bee, *Gnathoprosopis marianella* Raym., I found in two or three of the cells abandoned by the original occupant, a few minute, dark, "woolly" cocoons. There were several smaller cells, each of which was provisioned with dozens of exceedingly small midges—flies measuring only a millimetre or two in length. No regular storing of the provender is observable, for the prey is just cast into the cell in the utmost disorder.

Who gathered those tiny pests of the air; creatures so small that we humans know of their presence only when one dashes into the eye like a speck of dust? Indeed, when a good Samaritan removes it from our watering eye, we cannot be blamed for continuing to regard the black trifle as an atom of debris. But the microscope reveals that which the human eye fails to perceive. The lenses show the marvellous compound organs of vision glowing like rubies; the two iridescent wings; the frail legs—yes, all the characters are there to prove their place in the Naturalists' Order, Diptera—let us call them midges for convenience.

The spring, 1931, was rendered intolerable by the innumerable hordes of midges that not only infested the countryside, but also descended on the city, so that the city-dweller, too, was forced to notice the miniature lives about him. For my own part, driving along a country road on a still evening, I passed through a huge stratum of winged life; a wall, seven miles long, twenty feet in width, and, say, thirty feet in height. I did not find the ends, which may have extended for many more miles. Think of the immensity of that moving mass, not one unit of which would measure over a millimetre or two in size.

The flies were dashed into ears, nose, eyes, mouth; thousands flew in among our clothing, and I had to cover my face with a scarf to ward off some of the threatening millions. Our horse progressed under protest; his continuous snorting testifying to the irritation of his nostrils. The dog, sneezing with unwonted energy, and passing both feet down over his nose in rapid succession, provided the comic element to lighten our most miserable moments. Never would I have believed the tale had it come from some friendly narrator.

Has Nature provided any check on such an unbelievable host? There are plenty to decimate these hordes of midges. Swifts, hawking through the atmosphere, devour them in untold numbers by the most primitive method of simply opening their beaks: the prey flow in. But the execution is devoid of all finesse; it is too much like the whale plunging through a sea of life while the food pours, in an unending stream, down the mammal's open gullet.

I like better the sudden swoop of the Kookaburra, diving at the haystack for the suspicious mouse, the majesty of the Wedge-tail Eagle cleaving the air to pick up deftly with its talons the timorous rabbit, but far more admirable is the exquisite hawking, the banking, the hovering, the side-slipping, the spirals, the sudden dash of the minute black wasp that nests in the reeds with the bee.

Let us pause for a moment to limn her portrait. Four millimetres—that is to say, two-twelfths of an inch—in length, jet-black and highly polished; only on the front and median pair of legs is any change in the prevailing tint, there a little amber relieves the sable hue. The compound eyes are huge, for is not the prey of infinitesimal size, and the clear wings are beautifully prismatic. But the chief character that enables me to classify her is the peculiar, slender, node-like segments of the abdomen. By these things I know her to be a member of the Family Crabronidae; the generic and specific titles I give in another place. Let us call her the Flycatcher of the Reeds.

Where do I find this accomplished aeronaut?

At Ferntree Gully, the searcher after such petty truths cannot fail to observe the clusters of the common reed, *Juncus communis*. This hardy member of the plant-world grows anywhere, everywhere; it is at home in almost all parts of the world, so let us dismiss its geographical distribution from our minds.

Near the top of the reed one may observe a tiny circular hatchway, cut by the reed-bee to enable her to reach the dry pith of the interior. When the honey-gatherer is away, other insects take advantage of the entrance so provided, and also take up their quarters in the interior of the reed. The parasites, greatly daring, take up their residence in the very cells of the bee; feeding their babies on the stores of the industrious mother, others are content to accept any unoccupied nook or angle to shelter their nursery.

Among the last is the Flycatcher, and ever and anon, I see her return to the hatchway clasping a fly as an Eagle clutches a rabbit. No time is wasted in the cell, nor is there any need, for the midges are merely thrown in, without any observable order, and cover the egg entirely. In a few days the wasp's egg will hatch, and the larva will devour the flies. When the food is exhausted, the Flycatcher's baby will spin for itself a rather dark, woolly-looking cocoon.

Critical examination of the cradle-gown shows that the blackish colour is entirely due to the incorporation of small particles of the hard chitinous "shells" of the victims. These indigestible portions of the exoskeleton are put aside during the feeding period, but when the wasp is weaving, they are all utilised for the outer covering of the cocoon, the threads of which are very loosely put together. If it were not for the addition of the "skin" debris, the larva would be more or less visible in its cradle.

During the following December, it will have a rapid development; day by day white "beads" lengthen until the antennae are complete; the thin sacs will ultimately become wings, and the adult creature, feeling all the forces of life vibrating in its body, will cut its way clear of the soft cradle of its own weaving, and emerge, to hawk tirelessly after flies in the sunshine of the bush. Once more the naturalist is thrilled with the little aviator's skill.

"Look! The killer has dropped its prey. Watch her descend to retrieve it!"

But she does not descend. She makes a sudden flirt to the right, and instantly secures a fresh victim. Her acrobatics are too easily performed to worry over a mere trifle. She is like the experienced soldier, who would never run after a train, "another one will be along presently".

A NEW CRABRONID WASP.

By TARLTON RAYMENT.

SUBORDER CLISTOGASTRA.

Section Diploptera. Superfamily Sphecoidea. Family Crabronidae.

Dasyproctus verutus, sp. nov.

Male—length, 4mm., approx. Black.

Head large, circular from the front; frons very wide; clypeus covered with appressed silvery hair; supraclypeal area excessively constricted, owing to the great development of the compound eyes; vertex large; compound eyes claret-brown, very large, reniform; genae greatly developed; labrum blackish; mandibulae dentate, blackish; antennae with amber scapes, slightly dilated, flagellum black.

Prothoracic collar well developed, reaching to the tubercles, which have a fringe of silvery hair; mesothorax with a delicate lineolate sculpture, and numerous fine punctures; scutellum similar, but having a deep excavation; postscutellum similar, but lateral excavation wider; metathorax large, a delicate sculpture, a lunate area anteriorly, and a pyramidal area posteriorly. Ab-

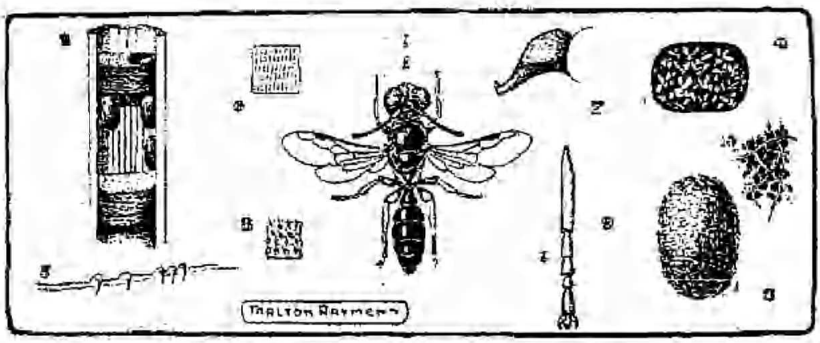
dominal dorsal segments one and two constricted to form a stout, short petiole, all segments polished, a few hairs and minute punctures basally; ventral segments similar.

Legs with coxae, median femora, hind trochanters, femora and tibiae black, other portions amber; tarsi of interior and median legs amber, hind tarsi blackish; claws amber, except the black hind ones, hind calcar short and stout, finely serrated; tegulae amber, suffused with black; wings exceedingly iridescent, hyaline; nervures blackish; cells: radial obtusely truncate at apex: one large cubital, one discoidal, one brachial; pterostigma large, black; hamuli five, weakly developed.

Locality.—Ferntree Gully, Victoria. (Rayment, December, 1931).

Type in the collection of the author.

Bred from cells in *Juncus communis*.



Details of the wasp, *Dasyproctus verutus*, Sp. nov.

EXPLANATION OF FIGURE.

1. Adult male wasp, *Dasyproctus verutus*, sp. nov.
2. The females occupy the cells of the bee, *Gnathoprosopis marianella* Raym.
3. The cocoon is black and woolly-looking.
4. The female wasp just throws in the flies without any order.
5. The five hamuli, or wing-hooklets, are weakly developed.
6. Portion of the wing-surface shewing the minute hairs.
7. Lateral view of the petiole or first abdominal segment.
8. The mesothorax is finely punctured.
9. The tarsal segments of the wasp are very slender.
10. Portion of the cocoon, more highly magnified, to shew the incorporation of portions of the indigestible "shells" of the prey.

Seasonal conditions in 1931 favoured numerous species of birds, notably water-fowl. Black Swans for many years have not been so abundant in Victoria as they are this summer. Great numbers of cygnets have been reared. Ducks also are exceptionally plentiful.